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ABSTRACT

The relation between type of label and perception of faces was assessed. Sixty-four second and sixth grade Ss were randomly assigned to four experimental conditions in which various kinds of labeling training were associated with four purple and green smiling and frowning faces. Ss then judged the similarity of pairs of the faces. Results revealed the predicted effects of labeling only for white children. Labels associated with color cues augmented the perception of color differences, whereas labels based on expression increased differentiation of expression variations, but not of color cues. (Author)

ABSTRACT

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The relation between type of label and perception of faces was assessed. Sixty-four second and sixth-grade Ss were randomly assigned to four experimental conditions in which various kinds of labeling training were associated with four purple and green smiling and frowning faces. All Ss then judged the similarity of pairs of the faces. Results revealed the predicted effects of labeling only for white children. Labels associated with color cues augmented the perception of color differences, whereas labels based on expression increased differentiation of expression variations, but not of color cues.

Labels and Children's Perception of Faces[1]

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Considerable developmental research has been stimulated by Dollard & Miller's hypotheses (1950) regarding the effects of labels upon the acquired distinctiveness and equivalence of cues. According to these investigators the association of distinctive names with objects decreases their stimulus generalization, whereas the use of common names increases stimulus generalizability. This theoretical framework has been supported by numerous demonstrations of linguistic transfer effects across a wide variety of tasks, including discrimination learning (Norcross & Spiker, 1958; Reese, 1972), memory (Flavell, 1970) and perceptual judgments (Katz, 1963; Etaugh & Averill, 1971), and it is generally acknowledged that labels can be very potent mediators of children's performance.

In exploring the various parameters which may influence the type and intensity of the verbal mediation phenomenon, investigators in this area have tended to use relatively neutral stimuli in simple experimental settings. The original formulations of Dollard & Miller, however, suggest a wide applicability of label effects to many complex areas of the child's life. The present study attempted to explore such verbal mediation effects in the areas of person perception and ethnic attitudes.

The theory outlined above suggests that labeling training should influence the processes of ethnic differentiation and subsequent attitude development in a number of ways. The learning of different names for groups of individuals would be expected to increase inter-group distinctiveness, whereas the use of the same label for all members within a group should increase the perceived intra-group similarity. A consequence of this latter phenomenon would be to facilitate the subsequent generalization of evaluative responses to all members of a group.

Some empirical support for the position that labeling may be an important concomitant of racial attitudes has recently been obtained in a series of studies conducted by the senior author. It has been found that: (a) nursery school children have more difficulty learning a discrimination between faces of another race than those of their own, (Katz, 1973a), (b) grade school children with high prejudice scores judge faces of another race as considerably more similar than do children who are low in prejudice (Katz, Johnson & Parker, 1970), and (c) distinctive labeling pretraining elicits significant decreases in children's negative racial attitudes (Katz, 1973b).

Although each of these findings is in accord with the view that labeling is related to the ontogenesis and maintenance of racial attitudes, the underlying assumption that the type of labels employed affects the particular way in which children categorize and perceive people has not been tested directly in these earlier cited studies. The present investigation, therefore, attempted to assess the ways in which particular types of labels associated with facial stimuli might influence their subsequent perception.

One of the prerequisites for the development of ethnic attitudes is the capacity to distinguish individuals on the basis of those stimulus

characteristics the adult community deems relevant. A factor which has not been investigated in this early differentiation process is the relation of the label applied to group members and the particular cues which are associated with the label. It has, for example, been assumed that skin color cues are particularly salient in person perception for both children and adults (Harding, Proshansky, Kutner & Chein, 1969). The possibility exists, however, that if individuals were consistently categorized on the basis of other types of physical cues (e.g., habitual facial expression) then color cues might be a less prominent basis for categorization. The present investigation assessed this possibility by employing as stimuli drawings of faces which varied in both color (purple or green) and expression (smiling and frowning). The experimental conditions utilized both equivalence and distinctiveness training. Within the equivalence condition, the common label was associated with either color cues or expression cues. The expectation was that subsequent perceptual judgments of facial similarity would reflect the particular type of labels employed.

The presentation of faces with unfamiliar skin colors (introduced as beings from another planet) in conjunction with fictitious racial-type names was employed in order to exercise some experimental control over the learning process. Although the original learning of labels for groups of people clearly occurs earlier in the developmental sequence, (Porter, 1971) the complexity of the responses required of the experimental situation made it more feasible to conduct the study with grade school children. Developmental trends were investigated, however, by employing children at two age levels. Whether a younger or an older group will be more affected by racial-type labeling is difficult to predict from earlier results. Although

younger children may be more susceptible in general to language training (e.g., Piaget, 1951; Katz & Zigler, 1968; Katz, Albert & Atkins, 1971; Kendler & Kendler, 1961), racial attitudes may become more cyrstallized with age (Minard, 1931; Horowitz, 1936), thus sensitizing older children more to racial-type labels. In view of this ambiguity, variations associated with age were assessed, but no specific developmental predictions were made.

METHOD

Subjects. Sixty-four Ss were randomly selected from the second- and sixth-grade classes of a racially integrated public elementary school in New York City. The geographical area served by the school ranged from upper-lower to middle SES. The sample was equally divided as to race (black or white), sex and age. The mean age of the younger and older groups were 7 yrs., 8 mos. and 11 yrs., 6 mos., respectively.

Stimuli. The stimuli employed were slides of four schematic line drawings of faces, two drawn on purple, and two on green art construction paper. Within each color, one face was depicted as smiling (i.e., an upturned mouth) and the other as frowning (a down-turned mouth). Except for color and expression variations, the faces were alike.

Procedure. Ss were tested individually in a mobile laboratory unit parked in the school yard. They were randomly assigned to one of four pretraining conditions. Group I (Common Label-Color) learned to associate one common nonsense syllable to the two green faces, and another to the two purple ones. Group II (Common Label-Expression) learned to associate one nonsense name to the two smiling faces and another to the two frowning ones. For both Group I and II, the names used were Phygian and Zeenite, in order to suggest racial-type labels. Group III (Distinctive Labels)

learned to associate the four names with the four faces: Phygian, Exion, Cranger and Zeenite. Finally, Group IV viewed the stimuli for the same number of trials without names. All Ss were given 40 training trials.

Following training, a perceptual judgment task was administered in which slides containing pairs of the previously used faces were presented tachistoscopically for a .2 sec. exposure. The subject's task was to judge the similarity of the faces, employing a movable lever. The apparatus used to gauge stimulus similarity has been described elsewhere (Katz, Albert & Atkins, 1971). Subjects were instructed to look at the facial pairs carefully, and to move the lever in accordance with how similar the faces appeared. One end of the continuum was defined as the identity slide ("as alike as they can be"), and the other end was defined as "completely different". The starting position of the lever was randomly varied on each trial and the particular identity slide was counterbalanced. The subjects viewed all possible pairs of slides for 16 trials. On four of the trials, identical pairs were introduced, in order to maintain interest.

Within each condition, half of the Ss were tested by a white, and half by a black E. Both were female, in their early twenties, who had had previous experience working with children.

RESULTS

The two types of slides of major interest ot the theoretical expectations were those facial pairs in which: (a) expression was varied, but color remained constant, and (b) those where color varied, but expression remained constant. In addition, pairs in which both types of cues vary concomitantly

provided an alternative check on the relative efficacy of the label training.

The mean similarity judgments made by the various groups to each of these types of slides are presented in Table 1. Neither Sex of S nor Race of E were significant effects, and thus the means in Table 1 do not include these variables. The possible range of scores on this task was from zero to 11, with higher numbers associated with greater perceived distinctiveness.

Insert Table 1 here

A four-way repeated-measures analysis of variance (Age X Treatment X Race of S X Type of Slide) was conducted on these scores. This analysis revealed that the effect associated with Type of Slide was significant ($F[2,96] = 14.47$, $p < .01$). The means associated with slides in which expression, color, or both varied were 6.20, 5.17, or 7.69, respectively. Thus, not unexpectedly, stimuli in which both cues varied were perceived as more dissimilar from one another than one-dimension variations. Pairs in which color varied were viewed as more similar by the children than pairs in which one member is depicted as smiling and the other as frowning.

The other significant effect to emerge from this analysis was the interaction of Treatment X Type of Slide X Race of S ($F[6,96] = 3.06$, $p < .01$). The pattern of means involved in this interaction can be seen in Table 1. The effects of labeling training are in the expected direction for white Ss. For these children, labels associated with expression variations elicited

more distinctive judgments of expression differences than did names asscciated with color. For facial pairs in which color was varied, the effects of labels were even more pronounced. Names associated with color differences elicited considerably more distinctive perceptions of color variations than did other types of training. When both cues varied, all label groups perceived the stimuli as more distinctive than the no-label condition, with the four-label group judging the stimuli as most distinctive. Black children, however, responded very differently, particularly to pairs of faces in which color was varied. Black Ss in the control condition viewed the purple and green faces as considerably more dissimilar than did the white children. Moreover, labels did not appear to increase perceptual distinctiveness for black children.

In view of the interaction with Race of Subject, separate analyses were conducted for black and white Ss. The analysis of the black children's scores revealed only a Type of Slide effect. Analysis of the white children's scores on the other hand, revealed significant effects attributable to both Type of Slide ($F=9.60$, $df = 2,48$, $p<.01$) and Label condition ($F = 3.04$, $df = 3,24$, $p<.05$). In addition, the interaction of Type of Slide Pair X Label Condition was significant ($F = 3.19$, $df = 6/48$, $p<.05$). Thus the predictions with regard to labeling appear to be confirmed for white Ss. Although there appeared to be a tendency for the younger Ss to become somewhat more affected by the labels, this trend was not significant.

DISCUSSION

The findings of the present study demonstrate that the type of label associated with faces influences the way in which they are subsequently perceived. For white children, labels based on color cues increased the perceived distinctiveness of color variations relative to other types of labeling training.

Labels which referred to facial expressions, on the other hand, augmented differentiation of expression differences, but not of color variations. Having a different name for each face affected the perception of expressive and color differences equally. The control group tended to judge stimuli as more similar than did the label groups, and generally perceived smiling and frowning faces as more distinctive than purple and green pairs.

Labeling taining, however, did not elicit the same results with black children. Pairs of faces which varied in color were judged as much more distinctive by black control group children than by white children, suggesting a greater salience of color cues for black children, a finding reported by other investigators with younger children (e.g., Porter, 1971; Katz, 1973). Thus it would appear that black children may have a stronger initial predisposition to generalize racial cues to non-meaningful color differences than do white children and, as a consequence, may be relatively unaffected by labels supplied by an experimenter.

A theoretical issue of current concern in verbal mediation work with children has been the question of whether label effects are primarily attributable to attentional, mediational or rehearsal phenomena (e.g., Tighe & Tighe, 1966; Jeffrey, 1970). The discrepant findings of the present study with regard to black and white children suggest that the initial effect of language cues on perceptual categorization may well be an attentional one. Color differences were not perceived by white children in the control group as a major source of distinctiveness. The introduction of labels which categorized faces on the basis of color cues clearly changed the nature of subsequent judgments, however. In contrast, black children began the task with color cues more salient, and for these children, labeling training was relatively ineffective. The possibility exists, however, that the specific function a label performs may change with the nature of the task.

Thus, the attentional components of labels may be particularly cogent in a perceptual judgment task, as was true in the present study. The effects of labels which have become integrated into the child's repertoire in subsequent learning tasks might, however, be more readily attributed to mediational and/or rehearsal phenomena. The theory of ethnic differentiation and attitude development proposed herein suggests such a two-stage process.

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TABLE 1

Mean Perceptual Judgments Made by Various Groups

Treatment	Race of S	Type of Stimuli					
		Expression Varying		Color Varying		Both Varying	
		Second Grade	Sixth Grade	Second Grade	Sixth Grade	Second Grade	Sixth Grade
1. Labels for Color	White	4.54	5.81	9.22	8.02	9.51	8.12
2. Labels for Expression	White	6.37	7.32	5.20	4.60	7.42	6.89
3. Distinctive Labels	White	7.51	6.10	8.32	4.05	10.91	8.56
4. No Labels	White	5.04	5.85	1.96	3.52	4.86	6.48
1. Labels for Color	Black	7.86	6.98	5.64	3.86	9.92	7.79
2. Labels for Expression	Black	6.09	4.91	5.49	3.82	5.21	6.51
3. Distinctive Labels	Black	4.98	5.75	7.16	3.43	8.36	5.90
4. No Labels	Black	5.41	5.69	5.47	7.33	7.26	7.80

FOOTNOTES

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